

		Tesla, Inc. Service Bulletin		<i>Inspect EDA Active and Passive Wheel Speed Sensor Gap</i>	
SB-24-33-001 February 8, 2024					
Classification		Section/Group		Mobile Service	Configuration
Campaign Bulletin		33 - Brakes		Cannot Perform	All
Model Year	Model	Country/Region		Build Location	
2022 - 2023	Semi	United States		Giga Nevada	
The model(s) and model year(s) listed are a general approximation of the affected VIN list. Refer to the VIN/Bulletin Tracker or Customer/Vehicle profile to determine applicability of this bulletin for a particular vehicle.					

Campaign Bulletin: This campaign bulletin addresses a non-safety-related condition and provides recommended technical diagnosis and repair procedures. Apply this procedure to the applicable vehicles.

Condition

On some Semi, the gap between the Efficiency Drive Axle (EDA) active and passive Wheel Speed Sensors (WSSs) and their respective hub tone ring may not meet Tesla specifications. This may result in Anti-Lock Braking System (ABS) faults and traction and stability control alerts appearing on the touchscreen while operating Semi at 10 mph (16 km/h) and above.

Correction

Adjust or replace the EDA WSSs as required.

Correction Description	Correction	Time
Inspect and Adjust EDA Active and Passive WSSs; No Additional Repairs Required	S012433001	0.18
Inspect and Adjust EDA Active and Passive WSSs; Replace One Active WSS	S022433001	0.30
Inspect and Adjust EDA Active and Passive WSSs; Replace Both Active WSSs	S032433001	0.42
Inspect and Adjust EDA Active and Passive WSSs; Replace One Passive WSS	S042433001	0.30
Inspect and Adjust EDA Active and Passive WSSs; Replace Both Passive WSSs	S052433001	0.42
Inspect and Adjust EDA Active and Passive WSSs; Replace One Active WSS and One Passive WSS	S062433001	0.42
Inspect and Adjust EDA Active and Passive WSSs; Replace Both Active WSSs and One Passive WSS	S072433001	0.54
Inspect and Adjust EDA Active and Passive WSSs; Replace Both Passive WSSs and One Active WSS	S082433001	0.60
Inspect and Adjust EDA Active and Passive WSSs; Replace All WSSs	S092433001	0.72

	Part Number	Description	Quantity
Parts If Necessary	1124656-00-D	ACTIVE WHEEL SPEED SENSOR, REAR AXLE	1–2
	1124655-00-D	PASSIVE WHEEL SPEED SENSOR, REAR AXLE	1–2
These part numbers were current at the time of publication. Use the revisions listed or later, unless otherwise specified in the Parts Catalog .			
Special Tools	1052625-00-B	ANGLED OFFSET METRIC FEELER GAUGE	

Shop Supplies Flashlight LED

Needle Nose Pliers, Long

Prybar, Long

If Necessary STD Cable Tie - 5.8"

Procedure

NOTE: This procedure must be performed on both the LH and RH EDA active and passive WSSs and their respective hub tone rings. Semi vehicles are equipped with four EDA WSSs (one active WSS and one passive WSS at each end of the EDA).

1. Position wheel chocks around the LH EDA tire.
2. Open the LH cabin door.
3. Set the ride suspension to "High".
 - a. All doors and closures must be closed.
 - b. Semi must be in "Drive" state with the gear selector in the "Neutral" position.
 - c. Press and hold the brake pedal, and then press the parking brake button (yellow) to release the parking brake (Figures 1 and 2).

NOTE: The LEDs (red) next to the parking brake button (yellow) will turn off.



Figure 1 – Parking brake engaged



Figure 2 – Parking brake disengaged

- d. Slowly release the brake pedal and make sure that Semi does not roll.

WARNING: Make sure that all personnel are a safe distance away from Semi, and that the area around the vehicle is safe when releasing the brake pedal with the parking brake disengaged.

- e. On the RH touchscreen, touch **Controls** (vehicle icon) > **Suspension** > **High** to set the suspension height (Figure 3).

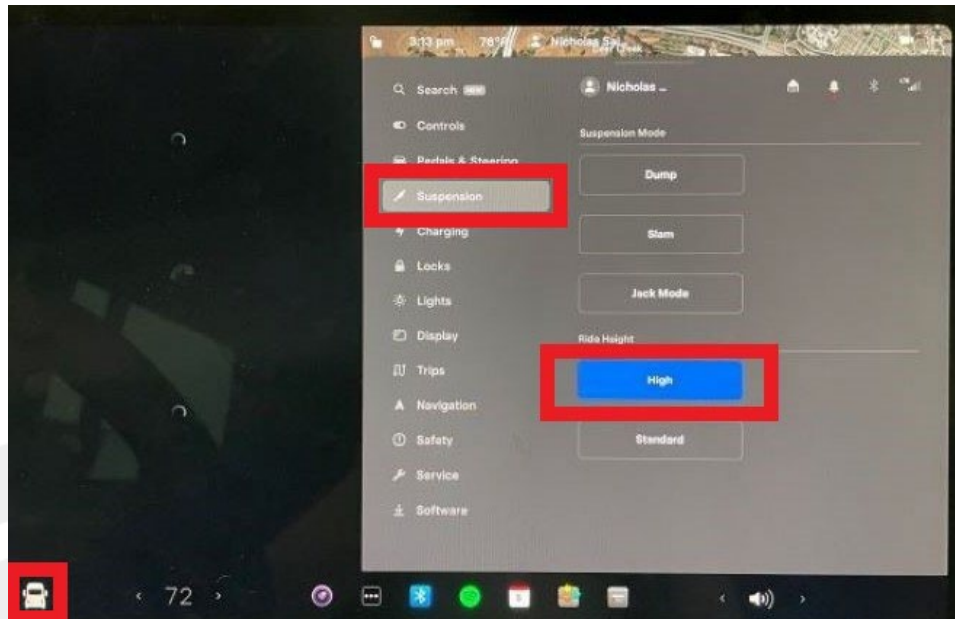


Figure 3

- f. Lift the parking brake button (yellow) upwards to engage the parking brake. Make sure that the LEDs (red) are illuminated.
- g. Press the button on the end of the gear selector stalk to put Semi in “Accessory” state.
4. Use a flashlight to inspect the LH EDA hub tone ring for indications of normal or abnormal wear.



Figure 4 – Normal LH EDA hub tone ring wear



Figure 5 – Abnormal LH EDA hub tone ring wear

- If abnormal wear on the LH EDA hub tone ring is observed (Figure 4), skip to step 7.
- If normal wear on the LH EDA hub tone ring is observed (Figure 5), continue to the next step.

5. Use an angled offset metric feeler gauge (0.25 mm) to measure the gap between the LH EDA active and passive WSSs and the hub tone ring (Figures 6 and 7).

 **NOTE:** Make sure that the active and passive WSSs are fully seated in the EDA housing prior to inserting the feeler gauge to obtain an accurate measurement.



Figure 6 – Active WSS and hub tone ring gap check



Figure 7 – Passive WSS and hub tone ring gap check

- If the feeler gauge cannot be inserted between the active and passive WSSs and the hub tone ring, skip to step 7.
- If the feeler gauge can be inserted between the active and passive WSSs and the hub tone ring, continue to the next step.

6. Adjust the LH EDA active and passive WSSs.

- a. Use a pair of long needle nose pliers and a long prybar to gently pull the LH EDA active and passive WSSs at least 0.25 mm away from the hub tone ring to allow for feeler gauge installation (Figure 8).

 **CAUTION:** Do not squeeze the WSSs with excessive force.

 **NOTE:** Use the back of the rotor as leverage to pull the WSSs away from the hub tone ring. Do not fully remove the WSSs from the EDA housing.

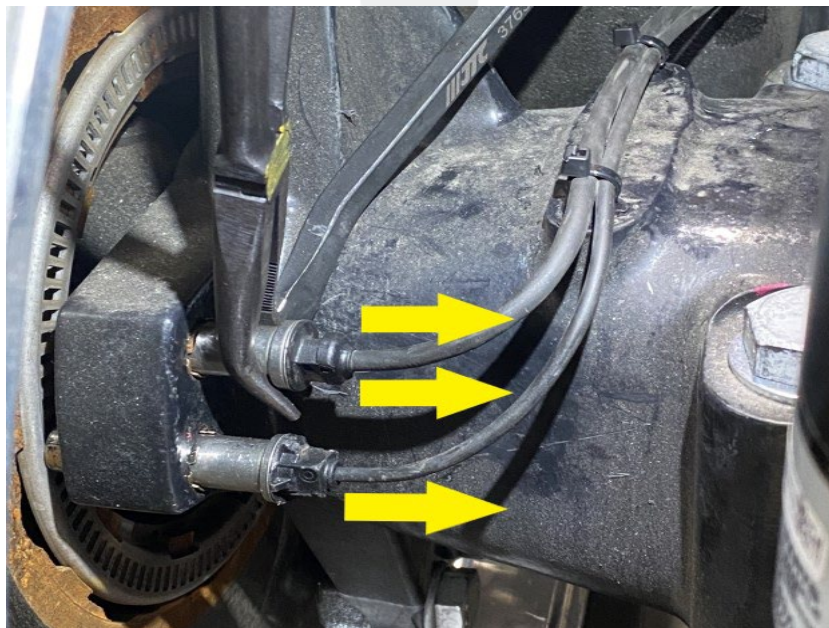


Figure 8

- b. Insert the feeler gauge between the LH EDA active and passive WSSs and the hub tone ring (Figure 9).

 **NOTE:** Make sure that the feeler gauge is evenly positioned between the WSSs and the hub tone ring.



Figure 9

- c. While holding the feeler gauge in position, use a pair of long needle nose pliers and a long prybar to fully seat the LH EDA active and passive WSSs back into the EDA housing, securing the feeler gauge against the hub tone ring (Figure 10).

 **CAUTION:** Do not squeeze the WSSs with excessive force.

 **NOTE:** If necessary, perform this step with assistance to make sure that the feeler gauge is properly aligned and secured while seating the WSSs into the EDA housing.



Figure 10
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- d. Gently remove the feeler gauge, taking care not to alter the 0.25 mm gap between the WSSs and hub tone ring (Figures 11 and 12). After removing the feeler gauge, determine next steps:



NOTE: A slight dragging sensation should be felt while removing the feeler gauge. This resistance indicates a proper gap measurement between the WSSs and hub tone ring.



Figure 11 – Feeler gauge removal

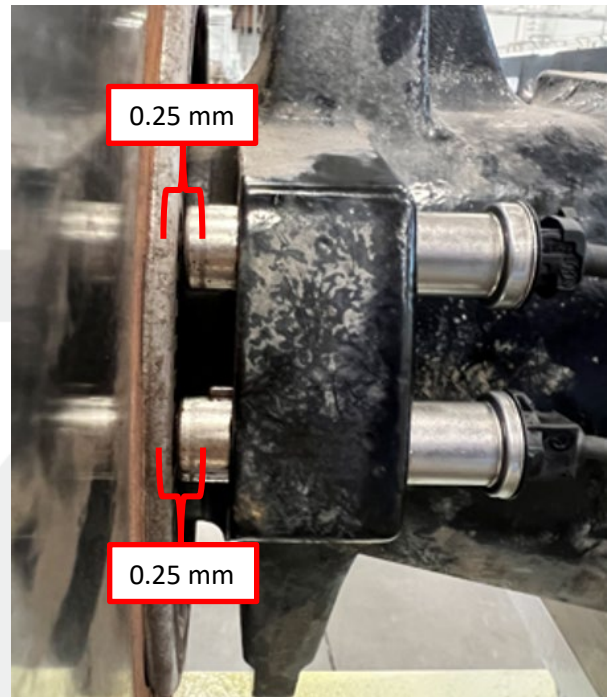


Figure 12 – Proper gap measurement (0.25 mm)

- If the feeler gauge can be removed from the WSSs and hub tone ring with a slight dragging sensation, the WSSs are installed correctly. Skip to step 8.
- If the feeler gauge cannot be removed from the WSSs and hub tone ring due to excessive resistance, the WSSs are not installed correctly. Repeat steps 6a through 6d until the feeler gauge can be removed from the WSSs and hub tone ring with a slight dragging sensation, and then skip to step 8.
- If the feeler gauge is removed from the WSSs and hub tone ring without any resistance and the WSSs are fully seated in the EDA housing, continue to the next step.

7. Inspect the LH EDA active and passive WSSs for indications of normal or abnormal wear.
- a. Use a pair of long needle nose pliers and a long prybar to remove the LH EDA active and passive WSSs from the EDA housing.

⚠ CAUTION: Do not squeeze the WSSs with excessive force.

📋 NOTE: Use the back of the rotor as leverage to remove the WSSs.

📋 NOTE: The active and passive WSS retainer clips (x2) may come out of the EDA housing during WSS removal. Reinstall the retainer clips if this occurs (Figure 13).



Figure 13 – Retainer clip

- b. Determine if the wear on the ends of the LH EDA active and passive WSSs is normal or abnormal (Figures 14 and 15).



Figure 14 – Normal WSS wear



Figure 15 – Abnormal WSS wear

- If abnormal wear on the LH EDA active and passive WSSs is observed, skip to step 7d.
- If normal wear on the LH EDA active and passive WSSs is observed, continue to the next step.

- c. Repeat steps 6b through 6d until the feeler gauge can be removed from the LH EDA active and passive WSSs and hub tone ring with slight resistance. If the feeler gauge cannot be removed from the WSSs and hub tone ring with slight resistance, the WSS hole diameters on the hub assembly may not be within specification. Perform the following steps:



NOTE: Note that additional work required will be on a separate job line.

- i. Create a Toolbox session.
 - ii. Record the WSS(s) in question and description(s) of the abnormal wear observed to the Toolbox session. Escalate the Toolbox session, wait for additional support, and then continue to step 7d.
- d. Replace the worn LH EDA active and/or passive WSS(s) as required, and then continue to step 8:
- For LH EDA active WSS replacement, refer to Service Manual procedure [3310020061](#).
 - For LH EDA passive WSS replacement, refer to Service Manual procedure [3310020051](#).
8. Perform steps 4 through 6d for the RH EDA active and passive WSSs and their respective hub tone ring as required.



CAUTION: Make sure the RH EDA active and passive WSSs and their respective hub tone ring are inspected and adjusted as required. This procedure will need to be repeated if the RH EDA WSSs aren't inspected and adjusted.

9. Set the ride suspension to “Standard”.
- a. All doors and closures must be closed.
 - b. Semi must be in “Drive” state with the gear selector in the “Neutral” position.
 - c. Press and hold the brake pedal, and then press the parking brake button (yellow) to release the parking brake.



NOTE: The LEDs (red) next to the parking brake button (yellow) will turn off.

- d. Slowly release the brake pedal and make sure that Semi does not roll.



WARNING: Make sure that all personnel are a safe distance away from Semi, and that the area around the vehicle is safe when releasing the brake pedal with the parking brake disengaged.

- e. On the RH touchscreen, touch **Controls** (vehicle icon) > **Suspension** > **Standard** to set the suspension height (Figure 16).

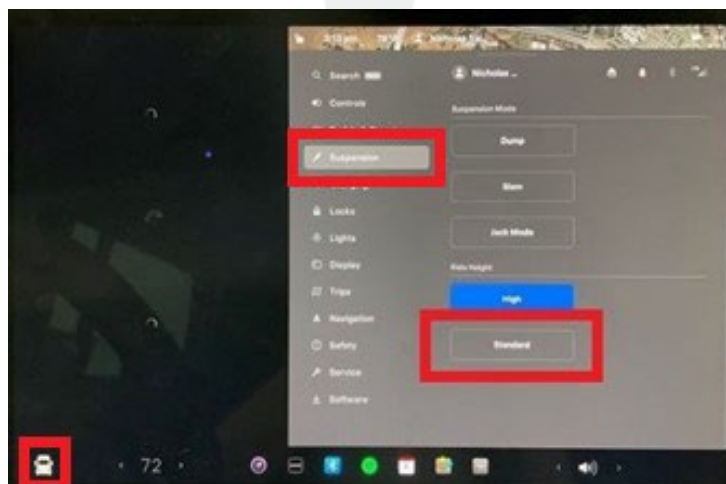


Figure 16

- f. Lift the parking brake button (yellow) upwards to engage the parking brake.

- g. Press the button on the end of the gear selector stalk to put Semi in "Accessory" state.
- 10. Remove the wheel chocks from the LH EDA tire.
- 11. Close out this document using the appropriate correction code based on the repair(s) performed.

